State of Maine
2004-2005 HIV/AIDS
Epidemiological Profile

Maine Department of Health and Human Services
Bureau of Health
Division of Disease Control
HIV, STD and Viral Hepatitis Program

Contact:
Mark Griswold, M.Sc.
Epidemiologist
Bureau of Health
HIV, STD and Viral Hepatitis Program
State House Station 11
286 Water Street, 9th Floor
Augusta, ME 04333
(207) 287-5193
mark.griswold@maine.gov

Table of Contents

List of Tables

List of Figures

Introduction

This Epidemiological Profile is designed to provide a comprehensive description of persons in Maine infected with HIV or at risk of HIV infection. The profile was developed by the Maine Bureau of Health (BOH) to assist Maine HIV prevention and care planners and others interested in HIV epidemiology. The data selected are intended to provide a thorough description of the effect of HIV/AIDS on Maine's population in terms of geographic, sociodemographic, behavioral, and clinical characteristics. From these data and the accompanying analysis, this profile should serve as a useful planning tool to identify needs, set priorities, and project future needs for a given population or service area.

The epidemiological goals of this profile, as suggested by the Centers for Disease Control and Prevention (CDC) are as follows:

- Provide a thorough description of the HIV/AIDS epidemic among the various populations (overall and subpopulations) in the state.
- Describe the current status of HIV/AIDS cases in the state and provide some understanding of how the epidemic may look in the future.
- Identify characteristics of the general population and of populations who are living with, or at high risk for, HIV/AIDS in defined geographic areas and who need primary and secondary prevention or care services.
- Provide information required to conduct needs assessments and gap analyses.

To meet these goals, the profile will address three essential epidemiological questions:

1. What are the sociodemographic characteristics of the general population in Maine?
2. What is the scope of the HIV/AIDS epidemic in Maine?
3. What are the indicators of risk for HIV infection and AIDS in Maine's population?

Using available data, the profile will examine groups at risk for HIV infection and answer these core questions. The document relies heavily on disease data reported to BOH by health care providers and laboratories. The document also considers local and national research concerning HIV risk behaviors and seroprevalence as well as US Census population data. In addition, the occurrence of sexually transmitted diseases (STDs) and populations at risk for STDs are described. There are some data-specific limitations to consider when using the profile and these are highlighted and discussed in the document. It is also important to note that the results of successful treatment and the expansion of surveillance data to include HIV infection may affect trend data.

A companion document will be published later in 2005 that includes data from the Ryan White Title II program. These data will examine care service utilization patterns among people living with HIV, as well as the characteristics of persons living with HIV who are not receiving primary medical care.

Question 1

What are the sociodemographic characteristics of the general population in Maine?

Examining the general characteristics of Maine's population provides an important broader context for understanding Maine's HIV epidemic at the local level. This section will consider the geographic, demographic, and socioeconomic data available that describe Maine's population. Understanding the geographic distribution of Maine's residents, as well as their demographic and economic characteristics, helps to identify risk factors associated with HIV infection that may impact the delivery of HIV-related services.

1.1 Geographics

Maine is a geographically large and sparsely populated state. According to the 2000 US Census, approximately 55% of Maine's 1,274,923 residents live in rural communities, compared with 25% of the US population as a whole. There are 41.3 persons per square mile in the state versus 79.6 persons per square mile for the nation as a whole. Approximately one third of the population lives in one of three large population areas, known as "metropolitan statistical areas" or MSAs. MSAs are located in the Portland, Lewiston, and Bangor areas with Portland as the largest MSA (222,000 persons). Vast areas of western, northern, and downeast Maine are thinly populated and access to medical services from many areas can be difficult.

Geographic data in this profile are presented by either county or region. Regions of residence are broad geographic categories that include multiple counties. The state has three definable regions – northern, central, and southern – that each include one MSA.

The northern region contains Aroostook, Hancock, Penobscot, Piscataquis, and Washington counties. Bangor, in Penobscot County, is the largest city in the northern region and one of Maine's three MSAs. The total population for the northern region according to the 2000 Census is 321,824.

The central region of the state consists of Androscoggin, Franklin, Kennebec, Knox, Lincoln, Oxford, Sagadahoc, Somerset, and Waldo counties. The twin cities of Lewiston and Auburn are located in Androscoggin County and make up an MSA in this region. The total population of these nine counties is 500,745.

The third region is the southern portion of the state and is comprised of Cumberland and York counties. Together, these counties contain 452,354 residents. This region includes the city of Portland, Maine's largest MSA.

1.2 Demographics

1.2.1 Age and Sex

Table 1 shows the distribution of Maine's population by age breakdown and sex. For males and females, nearly one-third were under 25 years of age, close to 30% were 25-44 years old, and male and female individuals over 65 years of age account for just over 14% of the total population.

Table 1.1 Distribution of the General Population in Maine, by Age Group and Sex, 2000

Age Group (yrs)	Males, % *n* = 620,309	Females, % *n* = 654,614	Total, % *N* = 1,274,923
<5	5.8	5.2	5.5
5-14	14.5	13.0	13.8
15-24	13.0	12.0	12.5
25-44	29.2	29.0	29.1
45-64	25.2	24.4	24.8
≥65	12.3	16.4	14.3

Source: US Census 2000 Summary File 1, http://factfinder.gov

The proportion of non-White and Hispanic residents in Maine is small – less than 4% in total as compared to almost 18% for the nation as a whole. Table 2 shows the percent distribution of the population by race/ethnicity and sex according to the 2000 Census. The greatest proportion of the population consists of Whites (about 97%). Other races alone account for less than 1% per race category. Hispanic residents make up 0.7% of Maine's population. Persons reporting two or more races account for 1% of the total population.

1.2.2 Race and Ethnicity

Table 1.2 Percentage Distribution of the Population in Maine, By Race/Ethnicity for Each Sex, 2000

Race	Males, % *n* = 620,309	Females, % *n* = 654,614	Total, % *N* = 1,274,923
White	96.9	97.0	96.9
Black	0.6	0.4	0.5
American Indian or Alaskan Native	0.6	0.6	0.6
Asian	0.6	0.8	0.7
Native Hawaiian/other Pacific Islander	<0.1	<0.1	<0.1
Some other race	0.2	0.2	0.2
≥ 2 races	1.0	1.0	1.0
Ethnicity			
Hispanic	0.8	0.7	0.7
Not Hispanic	99.2	99.3	99.3

Source: US Census 2000 Summary File 1, http://factfinder.gov

While there is geographic variability in the proportion of people of color in Maine's cities and counties, there are few identifiable areas of high minority population concentration.

Table 3 shows the two counties in Maine, Washington and Cumberland Counties, that have White populations that are slightly below the statewide average of 96.9%. In the northern region, Washington County has an American Indian/Alaskan Native population of 4.4%, the highest in the state. Of interest is that among American Indians in Maine, fewer than 30% live on the reservations in the state's five tribes. As seen in Table 3, Cumberland County, the largest county in Maine's southern region, has a more diverse racial population than any other Maine county. The White, non-Hispanic population still greatly exceeds other race categories, however. No counties in the central region of Maine have racial populations that differ significantly from the state as a whole.

Table 1.3 Percentage Distribution of the Population in Maine, by Race/Ethnicity and County Subpopulation, 2000

	Washington County	Cumberland County
Race	*n* = 33,941	*n* = 265,612
White	93.2	95.2
Black	0.3	1.1
American Indian or Alaskan Native	4.4	0.3
Asian	0.3	1.4
Native Hawaiian/Other Pacific Islander	<0.1	<.1
Some other race	0.4	0.3
≥ 2 races	1.1	1.1
Ethnicity		
Hispanic	0.8	1.0
Not Hispanic	99.2	99.0

Source: US Census 2000 Summary File 1, http://factfinder.gov

Year 2000 Census figures show that foreign-born persons account for 2.9% of Maine's population (11.1% of the US population as a whole is foreign-born). Cultural and language issues are critical for this population. Nearly 8% of Maine residents over five years of age report speaking a language other than English in the home (this figure is 11.1% for the nation as a whole). Maine has a relatively high proportion of Franco-Americans living in the state. Data from the 2001 US Census Supplementary Survey indicate that French and French-Canadian ancestry represents 21% of all ancestries reported by Maine residents, compared to 4% for the nation as a whole (US Census 2000). Some cities (Biddeford and Lewiston, among others) and areas of northern Maine have significantly greater proportions of Franco-American residents. Issues related to culture, socioeconomic status, and religion among Franco-Americans may influence public health prevention strategies.

1.2.3 Population Estimate, 2003

The US Census Bureau's 2003 total population estimate for the state of Maine is 1,305,728. The percent change in population from April 1, 2000 to July 1, 2003 is estimated to be 2.4%. This is slightly below the estimated percent change in population for the nation as a whole for the same time period (3.3%). Maine experienced a 3.8% increase in population from the 1990 Census to the 2000 Census. This is just under one-third the population growth experienced nationally (13.1%).

1.3 Socioeconomic Status

1.3.1 Poverty

As of 1999, 10.9% of individual Maine residents were living below the poverty line (US: 12.4%). At the same time, median household income ($37,240) falls below the reported US median household income ($41,994). Per capita money income for Maine residents is also well below the US amount ($19,533 vs. $21,587). Slightly less than 8% of Maine's families are living below the poverty level, which is less than the US as a whole (9.2%). However, among families with young children headed by women, poverty rates are significantly higher in Maine (54.7%) than for the US (46.4%).

Table 1.4 Percentage of the Population Under the Poverty Level by County

County	Under poverty level, %
Washington	19.9
Somerset	14.9
Piscataquis	14.8
Franklin	14.6
Aroostook	14.3
Waldo	13.9
Penobscot	13.7
Oxford	11.8
Androscoggin	11.1
Kennebec	11.1
Entire state	10.9
Hancock	10.2
Knox	10.1
Lincoln	10.1
Sagadahoc	8.6
York	8.2
Cumberland	7.9

Source: 1999 model-based estimates, http://quickfacts.census.gov

Table 4 shows the percentage of individuals below poverty for Maine's 16 counties. Ten of 16 counties in Maine had higher proportion of residents living below the federal poverty level than the state proportion of 10.9%. Washington County had the highest proportion, with almost double the statewide rate. Other counties with elevated proportions included Somerset, Piscataquis, Piscataquis, Franklin, and Aroostook, all in the northern and central regions of the state. The counties with the lowest proportion of residents living below the poverty level were Cumberland and York, both in the Southern Region.

1.3.2 Educational Attainment

Table 5 considers Maine's 2000 population of individuals 25 years of age and older with a high school diploma or higher or bachelor's degree or higher. As with poverty levels, educational attainment tended to be lower in the northern and central regions of the state. Counties with the lowest proportions of high school graduates included Aroostook, Androscoggin, Washington, Piscataquis and Somerset. Those with the highest proportion of graduates included Cumberland and Sagadahoc. In general,

those counties with lower proportions of high school graduates also had lower rates of bachelor degree attainment.

Table 1.5: Percentage of the Population 25 Years and Older, with High School Diplomas or Higher or with Bachelor's Degree or Higher, 2000

County	High school diploma or higher, %	Bachelor's degree or higher, %
Aroostook	76.9	14.6
Androscoggin	79.8	14.4
Washington	79.9	14.7
Piscataquis	80.3	13.3
Somerset	80.8	11.8
Oxford	82.4	15.7
Waldo	84.6	22.3
Franklin	85.2	20.9
Kennebec	85.2	20.7
Entire state	85.4	22.9
Penobscot	85.7	20.3
York	86.5	22.9
Knox	87.5	26.2
Hancock	87.8	27.1
Lincoln	87.9	26.6
Sagadahoc	88.0	25.0
Cumberland	90.1	34.2

Source: 1999 model-based estimates, http://quickfacts.census.gov

1.3.3 Health Insurance Coverage

Health insurance coverage is an important indicator for access to preventive care and health services. Table 6 provides a breakdown of insurance status for Maine's population as a whole as well as for adults aged 19 to 64. Comparisons with US insurance status figures are included.

Table 1.6: Insurance Status in Maine and the US

Insurance Status	**Maine** All age groups, % *N* = 1,272,010	**US** All age groups, % *N* = 287,368,410	**Maine** Adults 19-64, % n = 779,590	**US** Adults19-64, % n = 175,111,560
Employer	51	54	63	64
Individual	5	5	6	6
Medicaid	18	13	14	8
Medicare	15	12	2	2
Uninsured	11	16	15	20

Source: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on pooled March 2003 and 2004 Current Population Surveys. Total US numbers are based on March 2004 estimates.

The percentage of uninsured individuals in Maine is less than the US percentage for both the total population and for adults aged 19 to 64. For both groups, however, the number of individuals covered by Medicaid is significantly higher than the US figure.

The percentage of individuals aged 19 to 64 on Medicaid in Maine is close to twice the percentage for the US as a whole.

1.4 Key Points

- Maine is a large, sparsely populated state, with more than half the population residing in rural communities.
- Nearly one-third of Maine's population is under 24 years-old.
- The proportion of Hispanic and non-White residents in Maine is small – less than 4% in total as compared to almost 18% for the nation as a whole.
- Between 1990 and 2000, Maine's population grew by only 3.8%, less than one-third the rate of national population growth. As of 2003, Maine's overall population was estimated to be 1,305,728.
- Per capita income for Maine residents is below the US amount ($19,533 vs. $21,587), but a smaller proportion of Maine families are living below the poverty level (8% vs. 9%).
- Counties in northern and central Maine tended to have lower proportions of high school and college graduates than southern Maine.

Question 2

What is the scope of the HIV/AIDS epidemic in Maine?

This section of the profile examines the extent and affect of the HIV/AIDS epidemic in Maine. The most recent data available by calendar year, January 1 to December 31, 2004, will be presented, along with data about trends. The number and percentage distribution of new HIV cases by age group, sex, exposure category, and race/ethnicity will be examined.

2.1 Data Sources and Limitations

HIV and AIDS are both "notifiable conditions," meaning that physicians, clinical laboratories, and public clinics are required by law to report information about HIV and AIDS diagnoses. Information included in these disease reports includes patient data such as age, sex, race, HIV risks, and town of residence. These data are used to help better understand the scope of the epidemic in Maine, and are crucial for planning, implementing and evaluating HIV-related care and prevention programs.

Although care is taken to ensure that disease reports are made in a timely and accurate manner, disease report data are not perfect. For example, public health data only include information about people who see health care providers; those who don't seek care are not reflected in HIV/AIDS data. This includes individuals who are living with HIV or AIDS but don't know about their infection because they have not been tested. In addition, public health data do not take into account changes in town, county or state of residence. Finally, there may be delays or lapses in reporting by physicians or laboratories.

Because of these limitations, it is important to remember that the public health data reported here represent ***estimates*** and not exact counts of people living with HIV and AIDS in Maine.

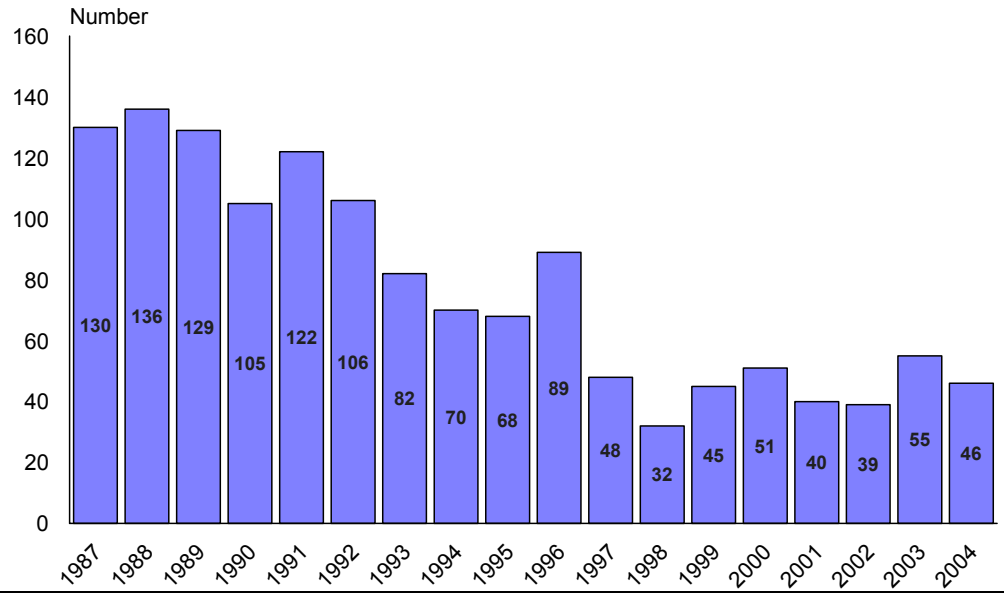
2.2 HIV Incidence

Since the Maine Bureau of Health began recording new HIV diagnoses in 1987, almost 1,400 positive HIV tests have been reported to the BOH. As has been seen nationally, the annual incidence of HIV-positive diagnoses in Maine has declined from more than 100 positive test reports in the late 1980s and early 1990s, to fewer than half that number in more recent years.

Approximately 45% of individuals diagnosed with HIV during the past 5 years were ill enough to be classified with AIDS within 6 months of testing positive, probably indicating that they had been infected a significant period of time before diagnosis.

Figure 2.1 (next page) illustrates annual totals of new HIV diagnoses in Maine, spanning the years 1987 to 2004.

Figure 2.1: Maine HIV Diagnoses, 1987 to 2004



2.3 AIDS Incidence

Figure 2.2 (next page) illustrates Maine AIDS diagnoses by year of diagnosis from 1982 to 2004, and reported deaths among persons with AIDS from 1982 to 2003. Forty-six people were diagnosed with AIDS in Maine during 2003, with 16 deaths. So far, 45 AIDS diagnoses have been reported as occurring in 2004, although this number will likely increase because of reporting delays.

The figure shows a general decline in both new diagnoses and deaths, with the numbers of deaths in recent years at their lowest point since the 1980s. Like HIV, the numbers of new diagnoses have remained steady during the past several years. Overall declines in diagnoses and deaths among persons with AIDS are due in large part to widespread use of effective medical treatments for HIV disease.

2.4 Increasing AIDS Prevalence

Figure 2.3 (next page) shows three trend lines spanning the years 1984 to 2003. The trend data describe new Maine AIDS diagnoses by year of diagnosis; annual deaths; and the total number of people living with AIDS.

Each year since 1985 there have been more new AIDS diagnoses than deaths, indicating that the overall number of people living with AIDS has continued to increase over time. These data suggest that there are more people living with HIV/AIDS in Maine than ever before, with an estimated 477 persons living with AIDS at the end of 2003.

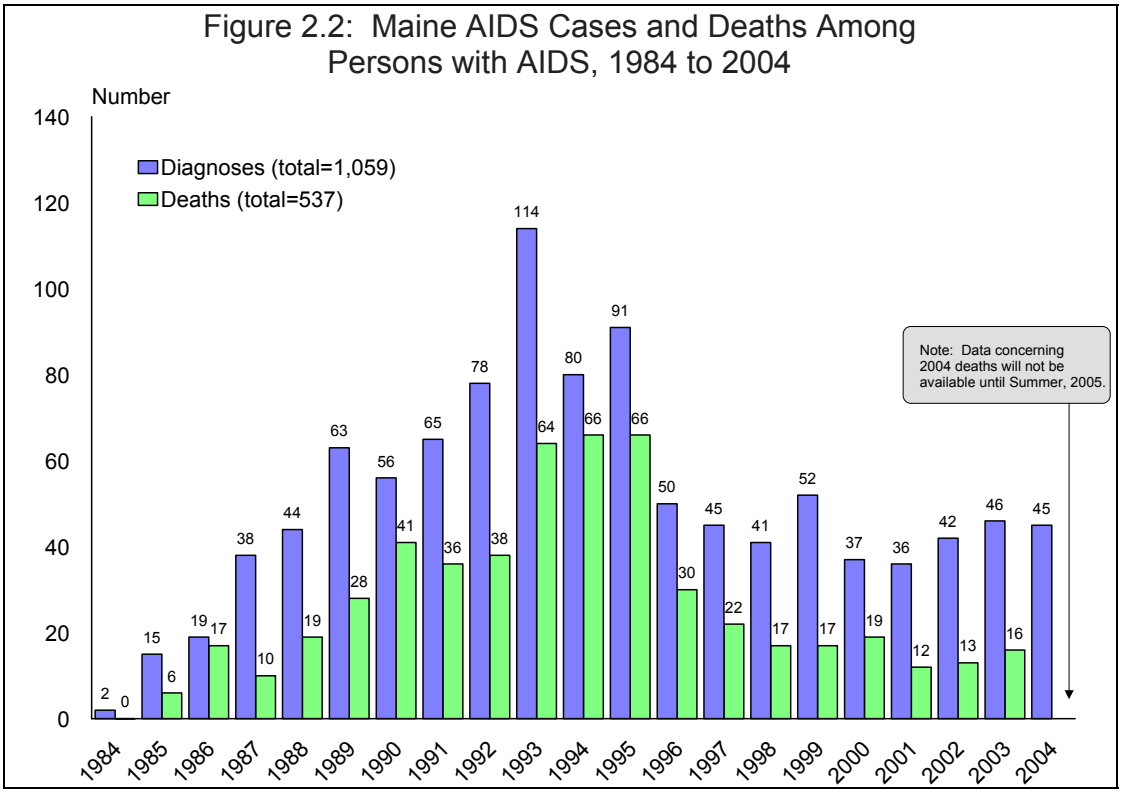


Figure 2.2: Maine AIDS Cases and Deaths Among Persons with AIDS, 1984 to 2004
Number
Diagnoses (total=1,059)
Deaths (total=537)
Note: Data concerning 2004 deaths will not be available until Summer, 2005.
2 0
15 6
19 17
38 10
44 19
63 28
56 41
65 36
78 38
114 64
80 66
91 66
50 30
45 22
41 17
52 17
37 19
36 12
42 13
46 16
45
1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004

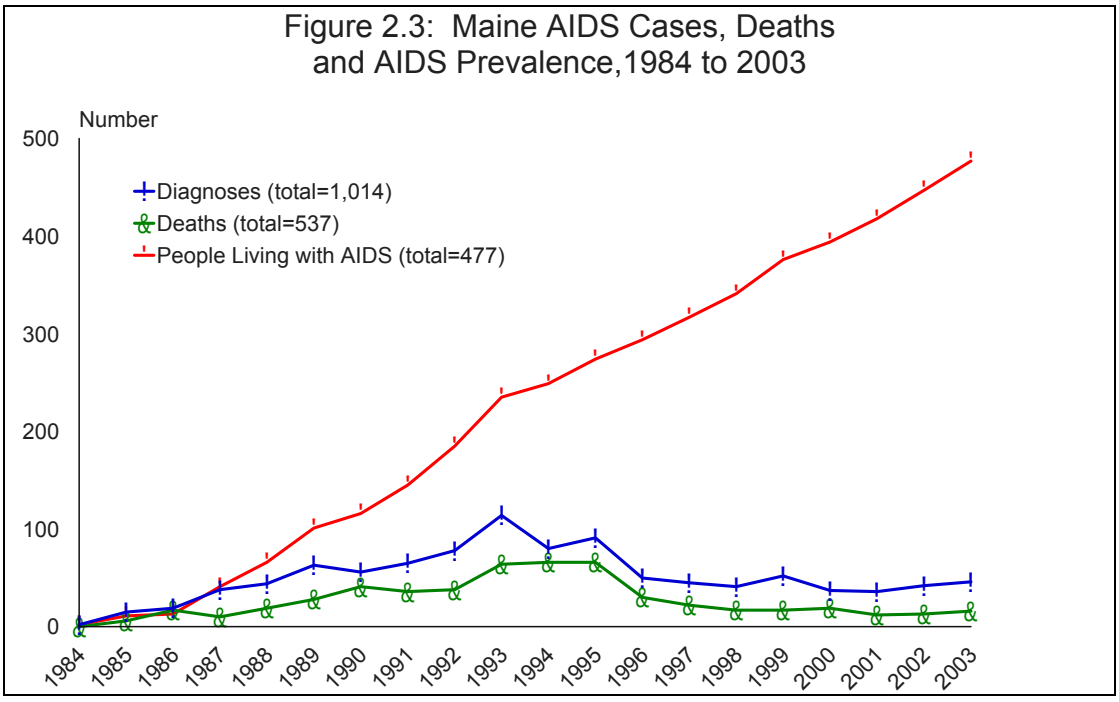


Figure 2.3: Maine AIDS Cases, Deaths and AIDS Prevalence,1984 to 2003
Number
Diagnoses (total=1,014)
Deaths (total=537)
People Living with AIDS (total=477)
1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003

2.5 HIV/AIDS Prevalence Estimate

HIV/AIDS prevalence refers to the number of people living in the state with HIV, including those who have an AIDS diagnosis. Just under 1,050 people are estimated to be living in Maine with diagnosed HIV infection. An additional 350-450 individuals may be unknowingly infected with the virus, for a total estimate of 1,400 to 1,500 people living with HIV/AIDS in Maine.

Where does this estimate come from?

The Maine HIV/AIDS prevalence estimate was obtained using a method suggested by CDC, which involves dividing the number of persons with a diagnosis of HIV (including AIDS) by the estimated range of persons living with HIV infection. Specific steps are outlined below:

- At the end of 2004, there were an estimated 1,041 people living with diagnosed HIV/AIDS in Maine. The Bureau of Health estimates that HIV/AIDS case reporting is approximately 95% complete, meaning that information concerning 95% of all HIV/AIDS diagnoses is reported to the BOH by doctors and labs.

- Using this information, an approximate number of people living with HIV who were not reported to BOH may be calculated as follows:
  = 1,041 x ([1/0.95] – 1)
  = 1,041 x (1.05 – 1)
  = 1,041 x 0.05
  = 52 persons with HIV/AIDS but unreported to the BOH

- Therefore, the total number of persons living with AIDS and HIV in Maine who know their status is:
  = 1,041 + 52
  = 1,093.

- CDC estimates that between 71% and 79% living with HIV know their status. Using this estimate, the total number of people living in Maine with HIV may be calculated as follows:
  = 1,093/0.79 to 1,093/0.71
  = 1,383 to 1,539

- Rounded to the nearest 100:
  = 1,400 to 1,500

2.6 HIV/AIDS Mortality

In 2001, the most recent mortality data available from the National Center for Health Statistics, seven (1.5%) of the 460 deaths among individuals 25 to 44 years of age in Maine were attributed to HIV. Of these seven deaths, five were among non-Hispanic whites, one was a non-Hispanic black, and there was one Hispanic death from HIV.

Table 2.1 lists the top 10 causes of death in Maine for persons 25 to 44 years of age from 1999 to 2001. HIV is the sixth leading cause of death among 25 to 44 year-olds.

Table 2.1 Ranking of 10 Leading Causes of Death in Maine among Persons 25-44 Years of Age, 1999-2001

Cause of Death	Ranking	Deaths, # (*N* = 1,125)	Total Deaths, %
Unintentional Injury	1	334	30
Malignant Neoplasms	2	280	25
Suicide	3	189	17
Heart Disease	4	168	15
Diabetes Mellitus	5	38	3
HIV	6	29	3
Liver Disease	7	26	2
Homicide	8	25	2
Cerebrovascular	9	22	2
Chronic Low Respiratory Disease	10	14	1

Source: National Center for Health Statistics (NCHS) Vital Statistics System

2.7 Demographic Characteristics of People living in Maine with Diagnosed HIV

Tables below highlight age group, sex, exposure category, and race/ethnicity for people living with diagnosed infection. In each table, data are presented for 2004 HIV diagnoses, and also for the category "People Living with Diagnosed HIV/AIDS in Maine." This second category includes all people living in Maine with diagnosed AIDS and HIV whose diagnoses were reported to BOH using a name or unique identifier. It does *not* include information about people who have HIV but have not yet been tested. It also doesn't include information about people with HIV/AIDS who have died.

Data about 2004 diagnoses are presented alongside data about people living with diagnosed infection to show how data about very recent diagnoses compare with overall data about the population of persons living with HIV in Maine.

In addition to these comparative tables, five-year trend data is presented that compares new HIV diagnoses from 2000 to 2004.

2.7.1 Sex

Table 2.2 (next page) shows 2004 HIV diagnoses and "People Living with Diagnosed HIV/AIDS in Maine" by sex. Forty-six new HIV diagnoses were reported during 2004, including 7 women and 39 men. Fifteen percent of persons newly diagnosed last year were women, versus 16% in the group "People Living with Diagnosed HIV/AIDS in Maine."

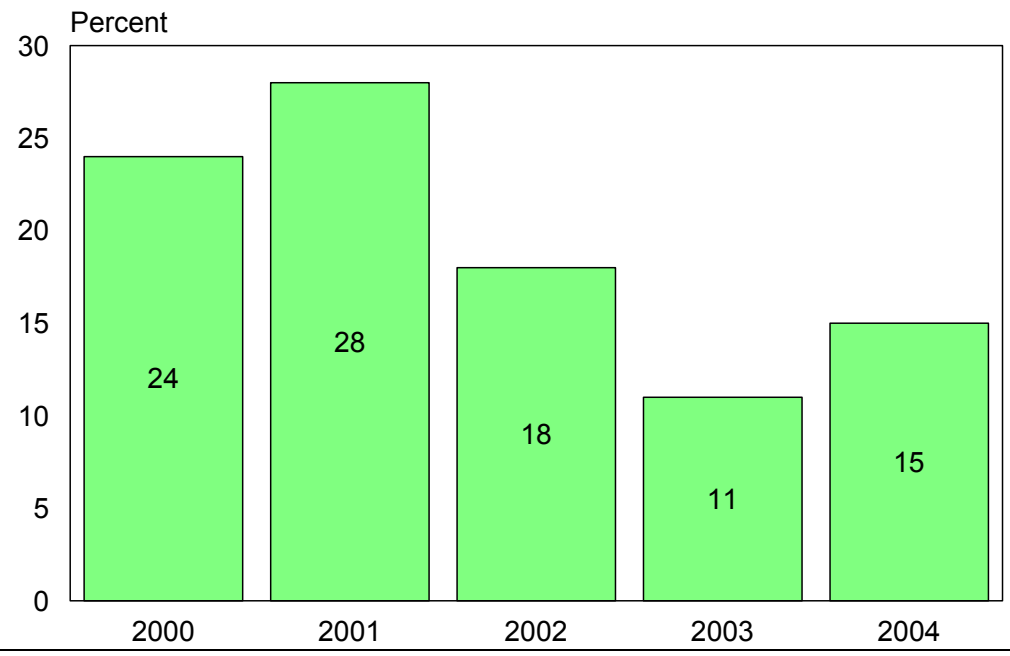
Table 2.2 2004 HIV Diagnoses and People Living with Diagnosed HIV/AIDS in Maine, by Sex

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Sex	No.	%	No.	%
Male	39	85	868	83
Female	7	15	170	16
Male-to-female transgender	0	0	3	<1
Total	46	100	1041	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

In Figure 2.4, the proportion of females diagnosed with HIV from 2000 to 2004 is presented. The percentage of women diagnosed during this time period ranged from a high of 28% in 2000 to a low of 11% in 2003. During the 5-year period, 19% of HIV diagnoses in the state of Maine occurred among females, and 81% were among males.

Figure 2.4: Proportion of Females Diagnosed with HIV in Maine, 2000 to 2004



2.7.2 Age

Table 2.3 provides a breakdown of diagnoses by age group. Seventy-eight percent of both 2004 diagnoses and HIV diagnosis among persons living with diagnosed infection occurred in those 30 years of age and over.

Twenty percent of 2004 diagnoses were among persons in their twenties; because many people are HIV-infected for some time before being tested, it is likely that a large proportion of those who tested positive in this age category were infected when in their

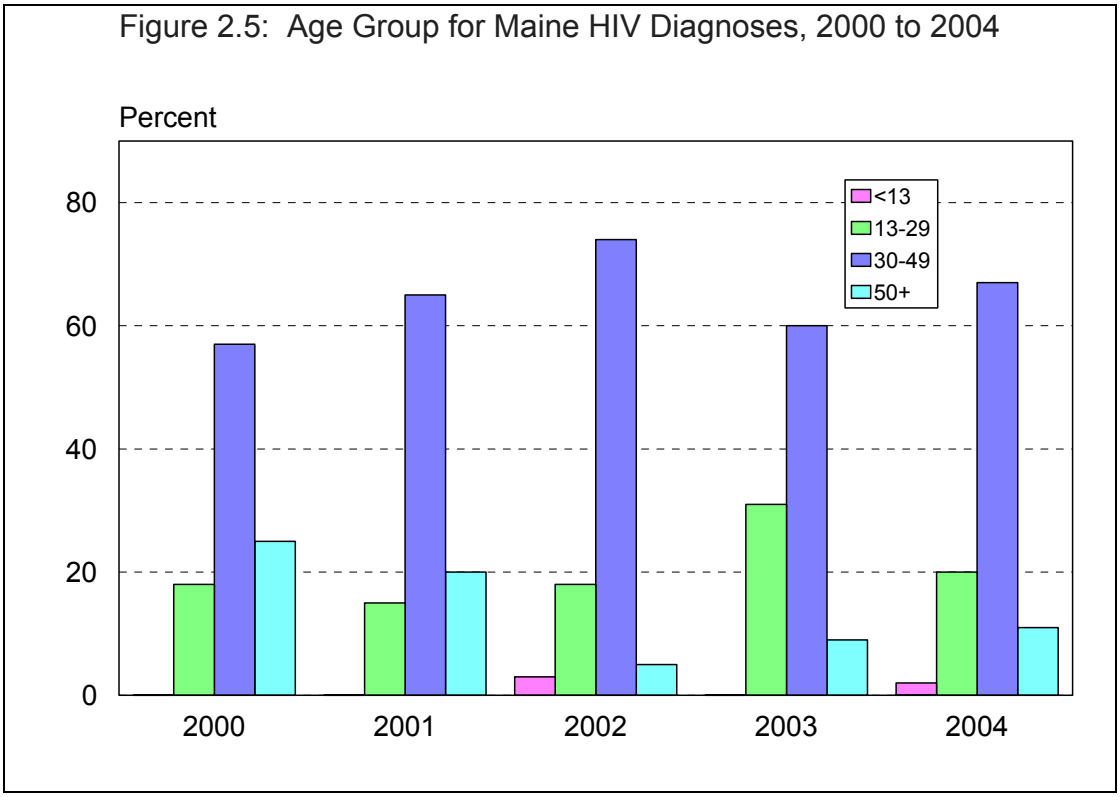
teens or early twenties. This emphasizes the need for continuing HIV prevention services for young people.

Table 2.3 Age at HIV Diagnosis for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Age at HIV Diagnosis	No.	%	No.	%
<13	1	2	10	1
13-19	0	0	16	2
20-29	9	20	149	19
30-39	12	26	347	44
40-49	19	41	197	25
>49	5	11	67	9
Total	46	100	786	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04, for whom age at HIV diagnosis is known.

Figure 2.5 shows age group for new HIV diagnoses between 2000 and 2004. Age groups have remained stable over the past five years, with a spike in diagnoses among 13 to 29 year-olds during 2003. This increase was largely due to a jump in HIV diagnoses that year among 20 to 30 year-old males who have sex with males.



2.7.3 Race and Ethnicity

Table 2.4 illustrates that the majority of persons affected by HIV in Maine are non-Hispanic White, with this group comprising 84% if 2004 diagnoses and 87% of persons living with diagnosed infection. After Whites, African American/Blacks are most represented among people living with HIV, comprising 9% of 2004 diagnoses and 7% of people living with diagnosed HIV/AIDS. Hispanics comprised 7% and 5% respectively.

Table 2.4 Race and Ethnicity for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Race	No.	%	No.	%
White	42	91	955	92
Black or African American	4	9	71	7
Asian	0	0	2	<1
American Indian/Alaskan Native	0	0	11	1
Native Hawaiian or Other Pacific Islander	0	0	0	0
More than one race	0	0	0	0
Some other race	0	0	0	0
Unknown	0	0	2	<1
Total	46	100	1041	100
Ethnicity				
Hispanic	3	7	51	5
Not Hispanic	43	93	990	95
Total	46	100	1041	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Figure 2.6 compares the overall state population by race/ethnicity with people living with diagnosed HIV/AIDS. Although racial and ethnic minorities make up less than 4% of Maine's population, people of color comprise nearly 13% of persons living with diagnosed infection. This comparison indicates that Black and Hispanic populations in Maine are disproportionately affected by HIV.

Figure 2.6: Comparing Race/Ethnicity in the Total Maine Population with People Living with Diagnosed HIV Infection

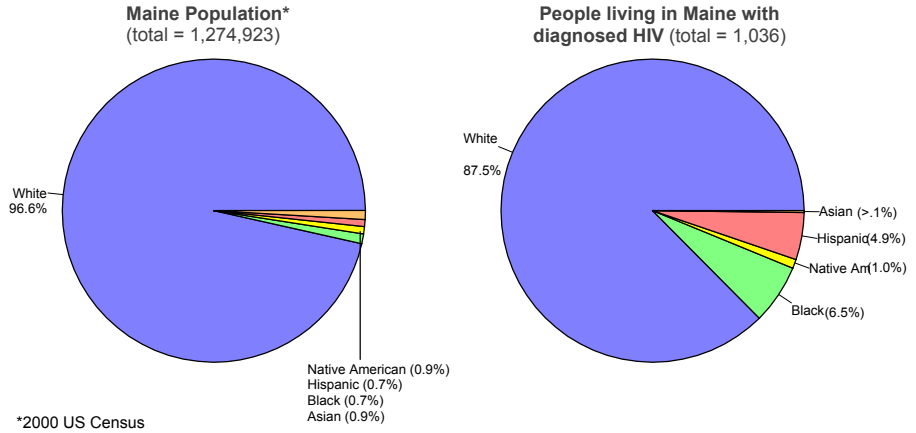
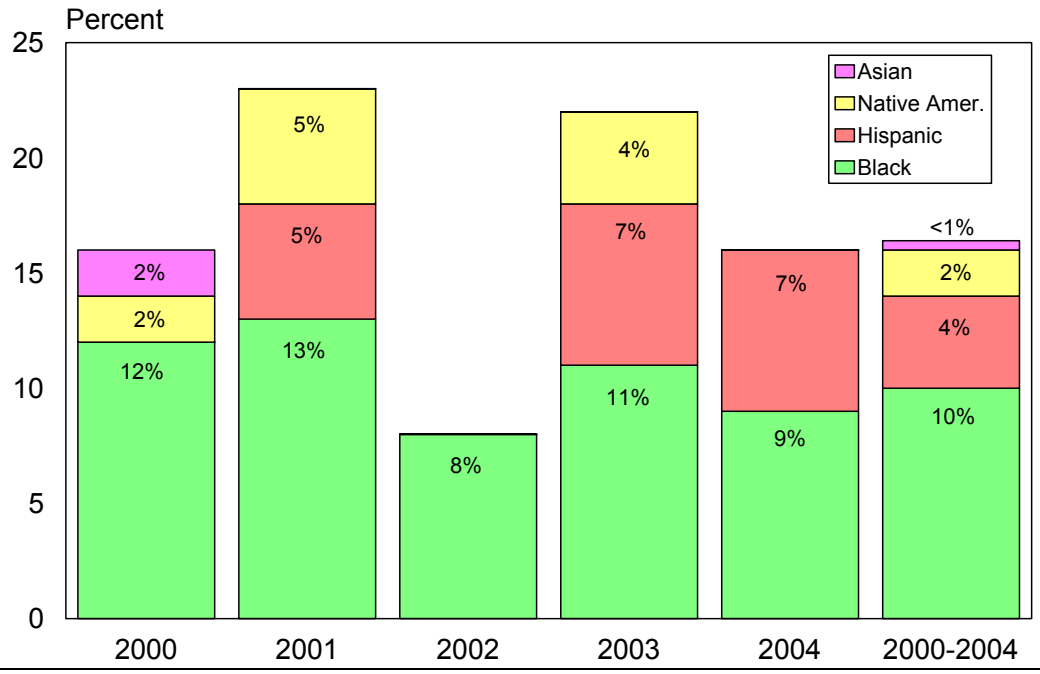


Figure 2.7 shows the proportion of non-White persons diagnosed with HIV in Maine between 2000 and 2004. African American/Blacks were consistently represented with 10% of diagnoses overall during the five-year period. Another four percent of diagnoses were among Hispanics.

Figure 2.7: Proportion of HIV Diagnoses among People of Color in Maine, 2000 to 2004



2.7.4 Exposure Category

In comparison to the general population, two key populations are disproportionately affected by HIV in Maine. These include males who have unsafe sex with males (MSM) and injection drug users who shared works or needles (IDU). Heterosexual sex with an at-risk partner is also a significant mode of transmission. Table 2.5 (next page) provides a breakdown of these and other exposure categories.

In 2004, almost three-quarters (72%) of HIV diagnoses were attributed to male-to-male sexual contact, followed by heterosexual transmission with an at-risk partner (13%), injection drug use (2%), and mother-to-child transmission (2%). Exposure was unknown or undetermined for 11% of diagnoses. This includes individuals who reported heterosexual contact but were unable to identify an at-risk partner (7%). An at-risk partner is defined as a person who is MSM (female partners only), IDU, or HIV-infected.

It is important to note that, in some instances, individuals may not report their true transmission risk because of fears about disclosure of participation in culturally stigmatized behaviors. These behaviors include both injection drug use and male-to-male sex. This may artificially inflate the heterosexual contact exposure categories.

Table 2.5 Mode of Transmission for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Males who have sex with males (MSM)	33	72	571	55
Injection drug users (IDU)	1	2	154	15
MSM/IDU	0	0	42	4
Heterosexual contact with at-risk partners	6	13	118	11
Heterosexual contact with no at-risk partners disclosed	3	7	66	6
Received contaminated blood products	0	0	14	1
Child born to mother with HIV	1	2	12	1
Undetermined	2	4	64	6
Total	46	100	1041	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

People infected through contaminated blood products and mother-to-infant transmissions represent a small number or people living with diagnosed HIV in Maine. The mother-to-infant transmission reported in 2004 was the only on of its type since 1996, and the infection occurred outside of Maine. There have been no documented instances of occupationally-acquired HIV infection in the state.

Table 2.6 shows mode of transmission among males for 2004 HIV diagnoses and for people living with diagnosed infection. Not surprisingly, male-to-male sex is the most frequently reported mode of transmission among males, accounting for 88% of 2004 diagnoses and 71% of diagnoses among males living with diagnosed HIV (when combined with the category MSM/IDU). Other important risks for males include injection drug use and heterosexual sex.

Table 2.6 Mode of Transmission among Males for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Males who have sex with males (MSM)	33	88	571	66
Injection drug users (IDU)	1	3	109	13
MSM/IDU	0	0	42	5
Heterosexual contact with at-risk partners	1	3	39	4
Heterosexual contact with no at-risk partners disclosed	3	7	42	5
Received contaminated blood products	0	0	13	2
Child born to mother with HIV	0	0	8	1
Undetermined	1	3	48	6
Total	39	100	872	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

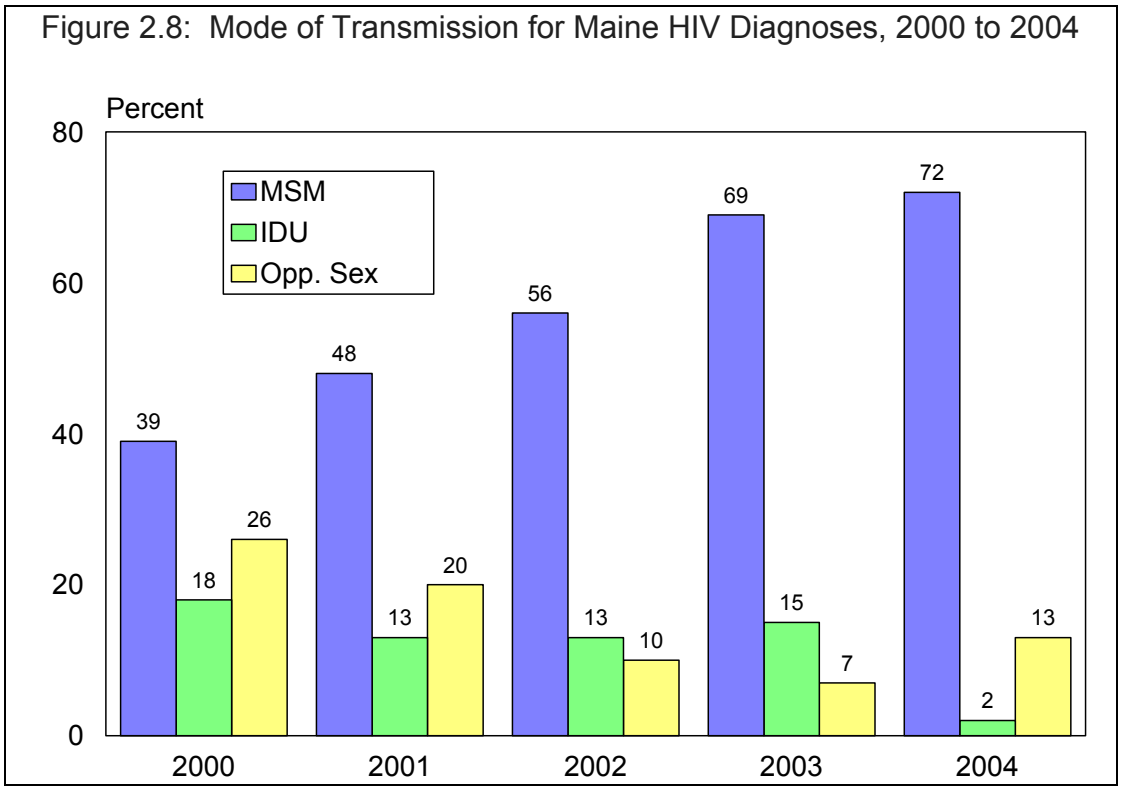
Table 2.7 shows mode of transmission among females for 2004 diagnoses and for females living with diagnosed HIV. The most-often cited mode of transmission for females is heterosexual sex with an at-risk partner, which accounted for 71% of female diagnoses in 2004 and 47% of diagnoses among women living in Maine with diagnosed infection. Injection drug use is also an important mode of transmission for females.

Table 2.7 Mode of Transmission among Females for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Injection drug users (IDU)	0	0	45	27
Heterosexual contact with at-risk partners	5	71	79	47
Heterosexual contact with no at-risk partners disclosed	0	0	24	14
Received contaminated blood products	0	0	1	1
Child born to mother with HIV	1	14	4	2
Undetermined	1	14	16	10
Total	7	100	169	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Figure 2.8 shows mode of transmission for Maine HIV diagnoses from 2000 to 2004. The proportion of HIV diagnoses among MSM has increased each year for the past four years. Injection drug use has remained relatively stable throughout the five-year period, with a decline in 2004 and the proportion of transmission via heterosexual sex with an at-risk partner declined, apart from a slight increase in 2004.



2.8 County and Regional Data

The following section describes the impact of HIV diagnoses in Maine by county and region of residence.

Table 2.8 shows county of residence for 2004 HIV Diagnoses with counties listed in rank order by number of diagnoses.

Table 2.8 County of Residence for 2004 HIV Diagnoses in Maine

County of Residence	No.	%
Cumberland	17	37
Androscoggin	9	20
York	6	13
Penobscot	5	11
Kennebec	2	4
Somerset	2	4
Waldo	2	4
Hancock	1	2
Knox	1	2
Lincoln	1	2
Aroostook	0	0
Franklin	0	0
Oxford	0	0
Piscataquis	0	0
Sagadahoc	0	0
Washington	0	0
Total	46	100

In 2004, Cumberland County had the most diagnoses, with 17, followed by Androscoggin, York and Penobscot counties. Ten of 16 Maine counties contained residents who were newly diagnosed with HIV in 2004.

Table 2.9 (next page) shows county of residence for people living with diagnosed HIV/AIDS in Maine, and displays the number of persons along with the rate per 100,000 population. Counties are rank-ordered by rate, with the statewide rate included in the ranking. Five counties, Cumberland, Kennebec, Androscoggin, Hancock and York all have rates that are higher than the statewide rate of 82 cumulative cases per 100,000 population. Cumberland County has the highest rate, with 140 cumulative cases per 100,000 population. This rate is 65% higher than the next-highest rate in Kennebec County. Cumberland also has the most cases overall, with 373 cases or 36% of the total.

Table 2.9 County of Residence for People Living with Diagnosed HIV/AIDS in Maine

County of Residence	Rate per 100,000 population	No.	%
Cumberland	140	373	36
Kennebec	85	100	10
Androscoggin	84	87	8
Hancock	83	43	4
York	83	155	15
Maine	82	758	100
Washington	74	25	2
Penobscot	72	105	10
Waldo	58	21	2
Knox	53	21	2
Somerset	49	25	2
Lincoln	45	15	1
Sagadahoc	43	15	1
Aroostook	35	26	3
Oxford	33	18	2
Franklin	27	8	1
Piscataquis	23	4	<1

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Because of Maine is a large and sparsely populated, this document divides the state into three units to help describe the geographic impact of HIV in Maine. These units are the Northern Region, which comprises Aroostook, Hancock, Penobscot, Piscataquis and Washington Counties; the Central Region, which includes Androscoggin, Franklin, Kennebec, Knox, Lincoln, Oxford, Sagadahoc, Somerset and Waldo Counties; and the Southern Region, comprised of Cumberland and York Counties.

Figures 2.9 and 2.10 (next page) are maps that show the distribution of people living with diagnosed infection in Maine by county and Region. Figure 2.9 shows individual counties shaded according to *case counts*. Figure 2.10 shows counties shaded by *case rate*. Data for each map correspond to the case rates and case counts provided above in Table 2.9. Regions of the state are divided by heavy blue lines, and cities and large towns are labeled (individual counties are not labeled because of space constraints).

In both maps, Cumberland County in Southern Maine is shown at the top of the range for case count and case rate. In addition, those other counties containing cities and large towns tend to have higher case counts and rates. These include Androscoggin and Kennebec Counties in Central Maine and Penobscot County in Northern Maine.

In the following sections, the demographic characteristics of persons with HIV residing in Northern, Central and Southern Regions will be explored.

Figure 2.9 Region of Residence for People Living with Diagnosed HIV/AIDS in Maine (counties shaded by *case counts*)

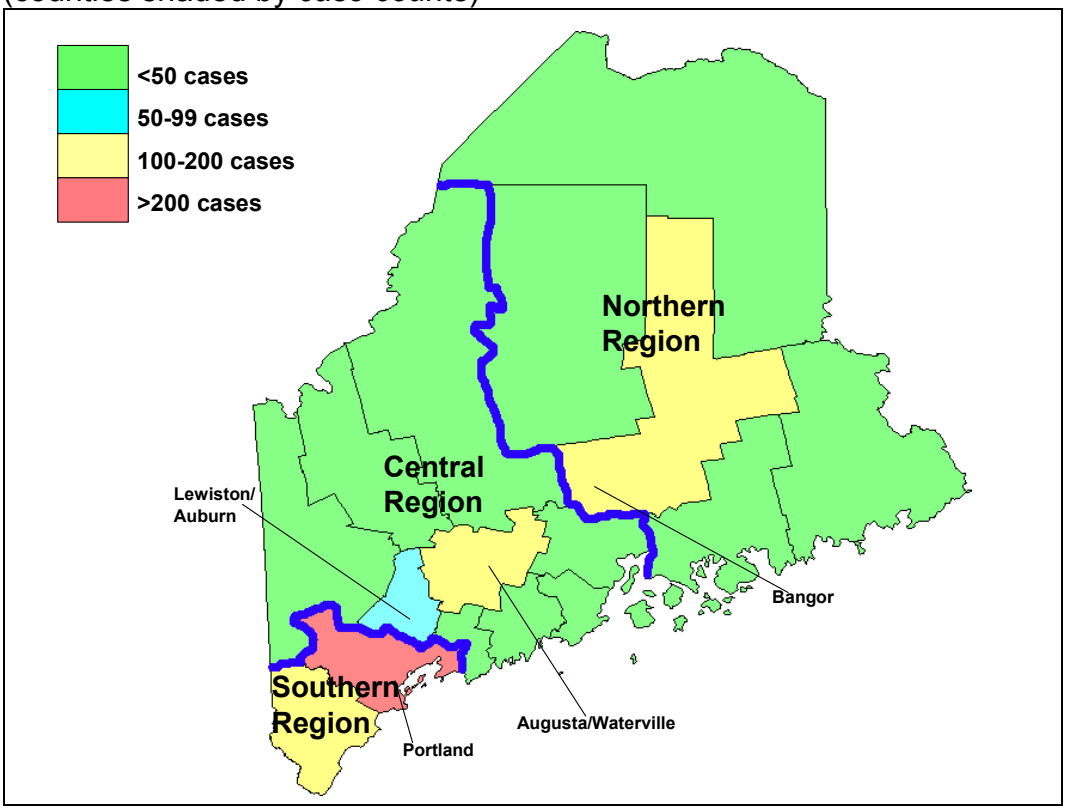
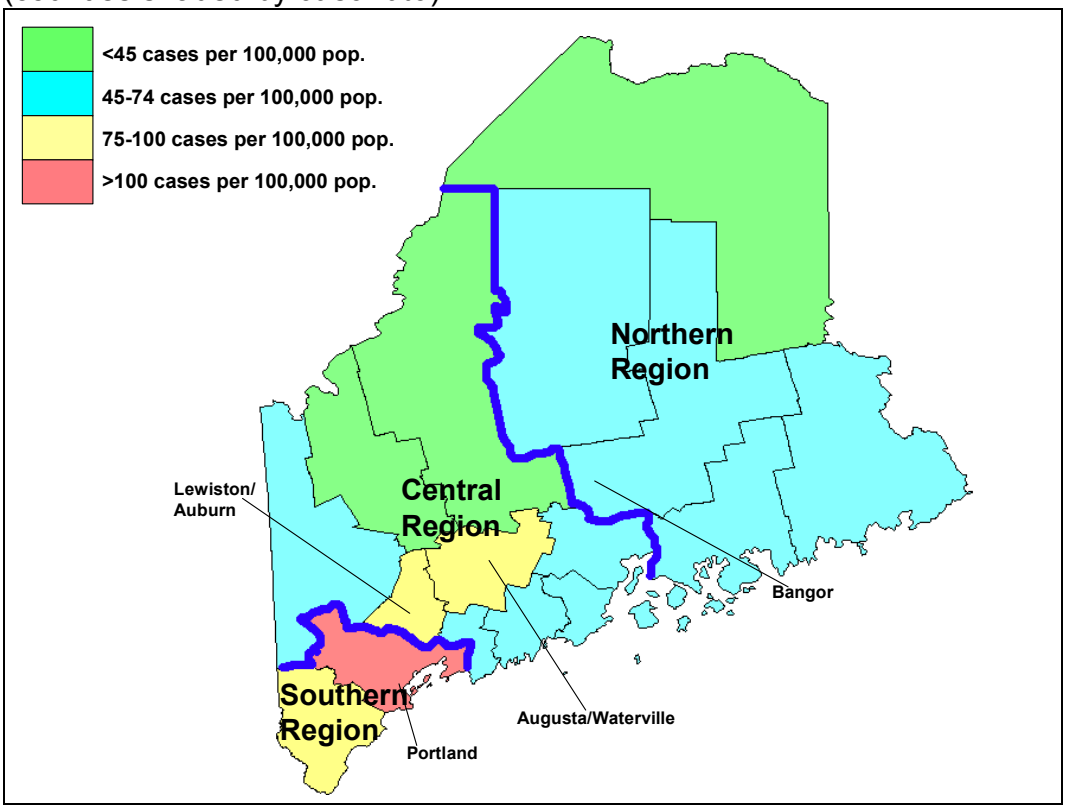


Figure 2.10 Region of Residence for People Living with Diagnosed HIV/AIDS in Maine (counties shaded by *case rate*)



2.8.1 Northern Maine

There were eight new HIV diagnoses in Northern Maine last year, and an estimated 203 persons are living in Northern Maine with diagnosed HIV infection. The following tables detail sex, mode of transmission, age group and race and ethnicity. Because the number of 2004 diagnoses in Northern Maine is small, caution should be used in the interpretation of data presented below.

Table 2.10 shows the sex of 2004 HIV diagnoses and for people living with diagnosed HIV infection. Last year, half of HIV diagnoses were among men and half among women. This compares to 23% of diagnoses among women for people living in Northern Maine with diagnosed HIV.

Table 2.10 Sex of 2004 HIV Diagnoses and People Living with Diagnosed HIV/AIDS in Northern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Sex	No.	%	No.	%
Male	4	50	157	77
Female	4	50	46	23
Male-to-female transgender	0	0	0	0
Total	8	100	203	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.11 shows mode of transmission for 2004 diagnoses and people living with HIV. Male-to-male sex was most-often reported for both new diagnoses and people living with diagnosed infection. For 2004 diagnoses, the second-most often reported group was heterosexual contact with an at risk partner; for people living with diagnosed infection, the second most reported group was injection drug use.

Table 2.11 Mode of Transmission for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Northern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Males who have sex with males (MSM)	4	50	77	37
Injection drug users (IDU)	0	0	41	20
MSM/IDU	0	0	7	3
Heterosexual contact with at-risk partners	2	25	26	13
Heterosexual contact with no at-risk partners disclosed	0	0	22	11
Received contaminated blood products	0	0	4	2
Child born to mother with HIV	1	13	5	2
Undetermined	1	13	21	13
Total	8	100	203	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.12 shows age group at diagnosis of 2004 diagnoses and people living with diagnosed infection. For new diagnoses, the 40-49 year old age group was most often reported, followed by the 30-39 year old age group. For people living with diagnosed infection, the most reported group was 30-39 year olds followed by 20-29 year olds.

Table 2.12 Age Group at HIV Diagnosis for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Northern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Age Group at HIV Diagnosis	No.	%	No.	%
Under 13	1	13	5	3
13-19	0	0	5	3
20-29	1	13	37	25
30-39	2	25	63	42
40-49	3	38	27	18
50+	1	13	12	8
Total	8	100	149	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04, for whom age at HIV diagnosis is known.

Table 2.13 shows race and ethnicity for 2004 HIV diagnoses and for people living in Northern Maine with diagnosed HIV. For 2004 diagnoses, Whites comprised almost two-thirds of diagnoses and African-Americans made up more than one-third (with 3 cases reported). For people living with diagnosed infection, Whites comprised 91% of cases, followed by African Americans and Native Americans.

Table 2.13 Race and Ethnicity for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Maine in Northern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Race	No.	%	No.	%
White	5	63	185	91
Black or African American	3	37	12	6
Asian	0	0	0	0
American Indian/Alaskan Native	0	0	6	3
Native Hawaiian or Other Pacific Islander	0	0	0	0
More than one race	0	0	0	0
Some other race	0	0	0	0
Unknown	0	0	0	0
Total	8	100	203	100
Ethnicity				
Hispanic	0	0	8	4
Not Hispanic	8	100	195	96
Total	8	100	203	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

2.8.2 Central Maine

There were 17 new HIV diagnoses in Central Maine last year, and an estimated 311 persons are living in Central Maine with diagnosed HIV infection. The following tables detail sex, mode of transmission, age group and race and ethnicity.

Table 2.14 shows the sex of 2004 HIV diagnoses and for people living with diagnosed HIV infection. Last year, almost all diagnoses (16 of 17) occurring in Central Maine were among men, with women comprising only 6%. This compares to 17% of diagnoses among women for people living in Central Maine with diagnosed HIV.

Table 2.14 Sex of 2004 HIV Diagnoses and People Living with Diagnosed HIV/AIDS in Central Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Sex	No.	%	No.	%
Male	16	94	258	83
Female	1	6	52	17
Male-to-female transgender	0	0	1	<1
Total	17	100	311	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.15 shows mode of transmission for 2004 diagnoses and people living with HIV. Male-to-male sex was most-often reported for both new diagnoses and people living with diagnosed infection. For people living with diagnosed infection, the second most reported group was heterosexual contact with and at-risk partner, closely followed by injection drug use.

Table 2.15 Mode of Transmission for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Central Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Males who have sex with males (MSM)	14	82	174	56
Injection drug users (IDU)	0	0	42	14
MSM/IDU	0	0	6	2
Heterosexual contact with at-risk partners	1	6	48	15
Heterosexual contact with no at-risk partners disclosed	1	6	12	4
Received contaminated blood products	0	0	4	1
Child born to mother with HIV	0	0	2	1
Undetermined	1	6	23	7
Total	17	100	311	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.16 (next page) shows age group at diagnosis of 2004 diagnoses and people living with diagnosed infection. For new diagnoses, the 40-49 year old age group was most often reported, followed by the 30-39 year old age group. For people living with

diagnosed infection, the most reported group was 30-39 year olds followed by 40-49 year olds.

Table 2.16 Age Group at HIV Diagnosis for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Central Maine

	HIV		People living with diagnosed HIV/AIDS[a]	
Age Group at HIV Diagnosis	No.	%	No.	%
Under 13	0	0	2	1
13-19	0	0	2	1
20-29	2	12	46	20
30-39	4	24	85	37
40-49	9	53	74	32
50+	2	12	24	10
Total	17	100	233	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04, for whom age at HIV diagnosis is known.

Table 2.17 shows race and ethnicity for 2004 HIV diagnoses and for people living in Central Maine with diagnosed HIV. For 2004 diagnoses, Whites comprised all diagnoses. For people living with diagnosed infection, Whites comprise 95% of cases, followed by African Americans at 4%.

Table 2.17 Race and Ethnicity for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Central Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Race	No.	%	No.	%
White	17	100	294	95
Black or African American	0	0	13	4
Asian	0	0	1	<1
American Indian/Alaskan Native	0	0	2	1
Native Hawaiian or Other Pacific Islander	0	0	0	0
More than one race	0	0	0	0
Some other race	0	0	0	0
Unknown	0	0	1	<1
Total	17	100	311	100
Ethnicity				
Hispanic	2	12	8	3
Not Hispanic	15	88	303	97
Total	17	100	311	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

2.8.3 Southern Maine

There were 21 new HIV diagnoses in Southern Maine last year, and an estimated 527 persons are living in Southern Maine with diagnosed HIV infection. The following tables detail sex, mode of transmission, age group and race and ethnicity.

Table 2.18 shows the sex for 2004 HIV diagnoses and for people living with diagnosed HIV infection. Last year, almost all HIV diagnoses (19 of 21) were among men, with only 10% among women. This compares to 23% of diagnoses among women for people living in Southern Maine with diagnosed HIV.

Table 2.18 Sex of 2004 HIV Diagnoses and People Living with Diagnosed HIV/AIDS in Northern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Sex	No.	%	No.	%
Male	19	91	454	77
Female	2	9	71	23
Male-to-female transgender	0	0	2	<1
Total	21	100	527	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.19 shows mode of transmission for 2004 diagnoses and people living with HIV. Male-to-male sex was most-often reported for both new diagnoses and people living with diagnosed infection. For 2004 diagnoses, the second-most often reported group was heterosexual sex with an at risk partner; for people living with diagnosed infection, the second most reported group was injection drug use.

Table 2.19 Mode of Transmission for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Southern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Mode of Transmission	No.	%	No.	%
Males who have sex with males (MSM)	15	71	319	61
Injection drug users (IDU)	1	5	71	13
MSM/IDU	0	0	29	6
Heterosexual contact with at-risk partners	3	14	44	8
Heterosexual contact with no at-risk partners disclosed	2	10	32	6
Received contaminated blood products	0	0	6	1
Child born to mother with HIV	0	0	5	1
Undetermined	0	0	21	4
Total	21	100	527	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

Table 2.20 (next page) shows age group at diagnosis of 2004 diagnoses and people living with diagnosed infection. For new diagnoses, the 40-49 year old age group was most often reported, followed by both the 20-29 and 30-39 year old age groups. For

people living with diagnosed infection, the most reported group was 30-39 year olds followed by 20-29 year olds.

Table 2.20 Age Group for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Southern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Age Group at HIV Diagnosis	No.	%	No.	%
Under 13	0	0	3	1
13-19	0	0	9	2
20-29	6	29	98	24
30-39	6	29	167	41
40-49	7	33	96	24
50+	2	10	31	8
Total	21	100	404	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04, where age at HIV diagnosis is known.

Table 2.21 shows race and ethnicity for 2004 HIV diagnoses and for people living in Southern Maine with diagnosed HIV. For 2004 diagnoses, Whites comprised almost all diagnoses (20 of 21) followed by African-American/Blacks (with 1 case reported). For people living with diagnosed infection, Whites comprise 90% of cases, followed by African American/Blacks at 9%.

Table 2.21 Race and Ethnicity for 2004 HIV Diagnoses and for People Living with Diagnosed HIV/AIDS in Southern Maine

	2004 HIV diagnoses		People living with diagnosed HIV/AIDS[a]	
Race	No.	%	No.	%
White	20	95	475	90
Black or African American	1	5	46	9
Asian	0	0	1	<1
American Indian/Alaskan Native	0	0	3	1
Native Hawaiian or Other Pacific Islander	0	0	0	0
More than one race	0	0	0	0
Some other race	0	0	0	0
Unknown	0	0	2	<1
Total	21	100	527	100
Ethnicity				
Hispanic	1	5	34	6
Not Hispanic	20	95	492	94
Total	21	100	527	100

[a] Includes people living with AIDS or HIV diagnoses reported to BOH with a name or unique identifier as of 12/04.

2.9 Key Points

- During 2004, 46 HIV diagnoses and 45 AIDS diagnoses occurred.
- During 2003, 16 people with AIDS died. AIDS is the sixth leading cause of death in Maine among persons aged 25 to 44 years.
- Incidence of both HIV and AIDS diagnoses have dropped markedly since the early 1990's. Despite this fact, HIV/AIDS prevalence continues to increase because deaths due to AIDS are at their lowest point since the beginning of the epidemic.
- Approximately 45% of persons diagnosed with HIV during the past five years were ill enough to be classified with AIDS within six months of testing positive, probably indicating that they had been infected a long while before their HIV diagnosis.
- It is estimated that approximately 1,400 to 1,500 people are living with HIV/AIDS in Maine.
- In 2004, 15% of diagnoses were among females. It is estimated the 16% of persons living in Maine with diagnosed HIV/AIDS are female.
- Seventy-eight percent of both 2004 HIV diagnoses and persons living with diagnosed HIV were 30 years of age and over.
- The majority of persons affected by HIV in Maine are non-Hispanic White, with this group comprising 84% of 2004 diagnoses and 87% of persons living with diagnosed infection. After Whites, African American/Blacks are most represented among people living with HIV.
- In comparison to the general population, two key populations are disproportionately affected by HIV in Maine. These include males who have unsafe sex with males (MSM) and injection drug users who shared works or needles (IDU). During 2004, almost three-quarters of diagnoses were among MSM.
- Heterosexual sex with an at-risk partner is also a significant mode of transmission.
- African-American/Blacks in Maine are disproportionately affected by HIV, as are Hispanics and Native Americans.
- Five counties are disproportionately affected by HIV in Maine, including Cumberland, Kennebec, Androscoggin, Hancock and York. These five counties have cumulative HIV case rates that are higher than the statewide rate. Cumberland County has the highest case rates and the most cumulative cases overall, with 373 cases or 36% of the total.

Question 3

What are the indicators of risk for HIV infection and AIDS in Maine?

The data used to respond to Question 3 summarize factors that affect the risk of acquiring and transmitting HIV infection. These data include Maine-specific studies about the risk factors of populations most affected by HIV. In addition, BOH STD case surveillance data are presented. Reports and documents used in this section are listed below:

- 2004 BOH STD case surveillance data;
- 2003 CPG Needs Assessment: The Knowledge, Attitudes, Beliefs and Behaviors of Populations at Risk through Sexual Contact (Maine CPG, 2003);
- HIV Prevention and Injection Drug Use in Maine: A Statewide Needs Assessment (BOH, 2003);
- BOH MSM Behavioral Surveillance (BOH 2004); and
- Youth Risk Behavior Survey (2003, Maine Department of Education).

All of these documents help to create a better understanding of the behaviors and characteristics of at-risk populations in the state.

3.1 BOH STD Surveillance Data

BOH collects data regarding gonorrhea, chlamydia, and syphilis. STD incidence indicates that individuals are engaging in unprotected sex. In addition, research has shown that HIV-negative persons with another STD are two to five times more likely to get HIV if they're exposed. Likewise, HIV-positive persons who are infected with another STD are more likely to transmit HIV to their sexual partners. Therefore, those at risk for STD may also be at increased risk for HIV. This section of the profile reflects disease reports received through December 31, 2004. Trend data are also included to present a more comprehensive picture of the STD numbers in Maine.

3.1.1 Chlamydia

Figure 3.1 (next page) shows chlamydia diagnoses reported to the Maine Bureau of Health from 1996 to 2004. Chlamydia is the most frequently reported STD in the state. During 2004, more than 2,100 cases were reported. Apart from a slight decline in 2001, the number of diagnoses increased each year between 1996 and 2004. The number of 2004 reports represents an increase of 4% over the 2003 total.

Figure 3.1: Maine Chlamydia Diagnoses, 1996 to 2004

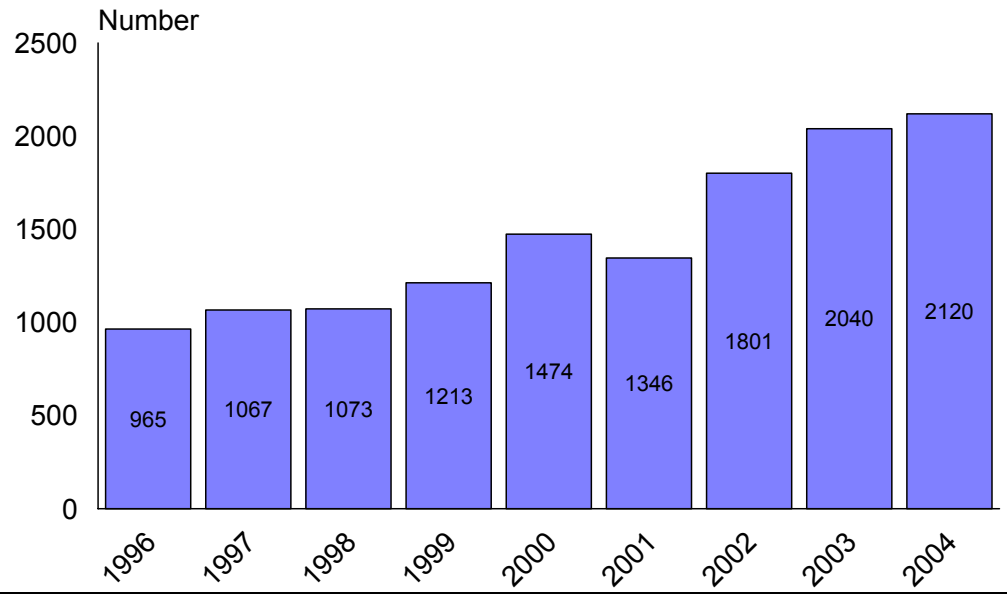


Figure 3.2 shows 2004 chlamydia diagnoses by age group and sex. People 24 years old and under are disproportionately affected by this disease, accounting for three-quarters of all 2004 cases. Females are diagnosed with chlamydia much more often than males, comprising 73% of all reports. This does not mean greater numbers of women are infected with the disease; women are tested for the disease more frequently than men, and may be more likely to exhibit symptoms.

Figure 3.2: 2004 Chlamydia Diagnoses by Age Group (total = 2,120)

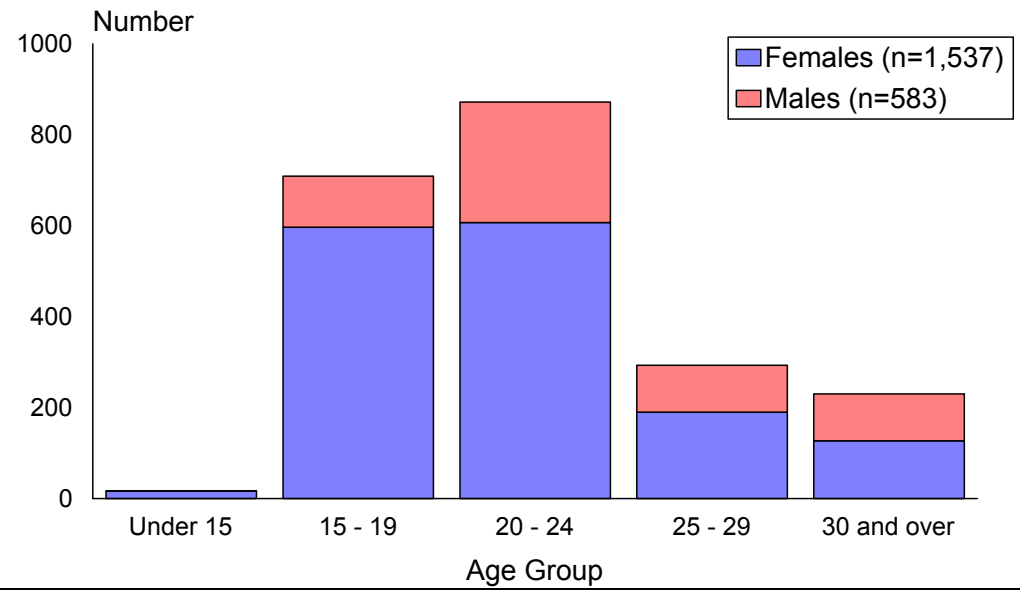


Table 3.1 lists the number of 2004 chlamydia diagnoses and rate per 100,000 population by county, with counties listed in rank order by rate. The statewide rate is included in the rank order. Number of diagnoses and percent of total are also listed in the table. Androscoggin, Cumberland and Penobscot Counties have chlamydia rates that are higher than the statewide rate.

Table 3.1 County of Residence for 2004 Chlamydia Diagnoses (Region in parentheses)

County of Residence	Rate per 100,000 population	No.	%
Androscoggin (Central)	281.3	292	14
Cumberland (Southern)	206.3	548	26
Penobscot (Northern)	187.7	272	13
State of Maine	166.3	2120	100
Oxford (Central)	164.4	90	4
Sagadahoc (Central)	159.0	56	3
Aroostook (Northern)	152.8	113	5
Washington (Northern)	147.3	50	2
Hancock (Northern)	142.9	74	3
Kennebec (Central)	137.5	161	8
Franklin (Central)	135.7	40	2
York (Southern)	128.5	240	11
Piscataquis (Northern)	121.8	21	1
Somerset (Central)	110.0	56	3
Lincoln (Central)	101.1	34	2
Knox (Central)	98.4	39	2
Waldo (Central)	93.7	34	2

3.1.2 Gonorrhea

Figure 3.3 (next page) shows gonorrhea diagnoses reported to the Maine Bureau of Health from 1996 to 2004. Two hundred fourteen cases were diagnosed in 2004, representing a 7% decrease over the 2003 total. Apart from the slight decrease in 2004, gonorrhea diagnoses increased each year between 1996 and 2003.

Figure 3.3: Maine Gonorrhea Diagnoses, 1996 to 2004

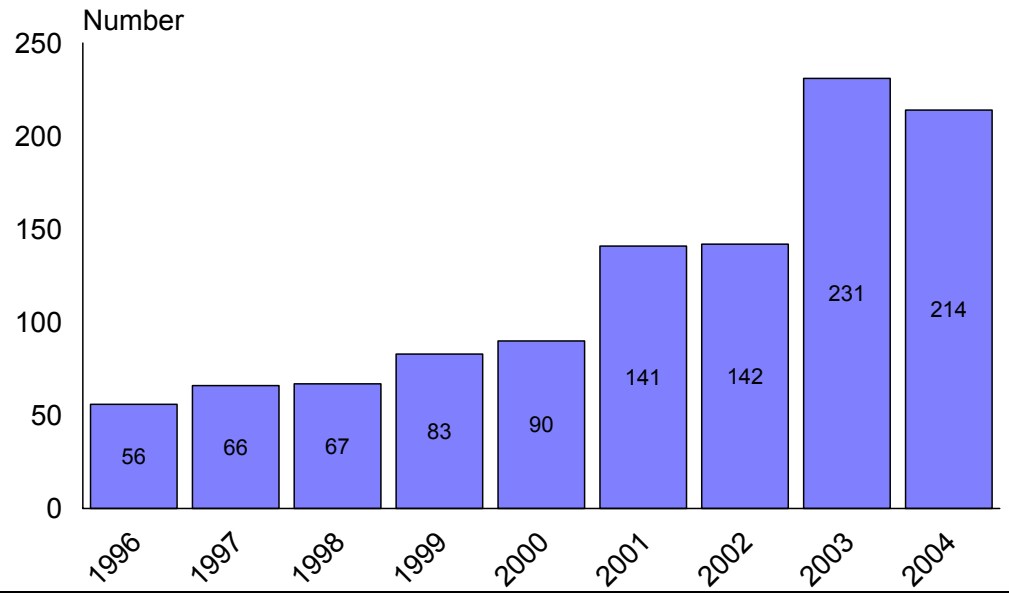


Figure 3.4 shows 2004 gonorrhea diagnoses by age group and sex. Gonorrhea affects a slightly older age range than chlamydia. Forty-two percent of 2004 diagnoses occurred in the 20-29 age range, and approximately one quarter were less than 20 years-old.

Males comprised approximately 60% all gonorrhea diagnoses. The greater proportion of male diagnoses is likely due to diagnoses among MSM, who accounted for a third of cases reported in 2004.

Figure 3.4: 2004 Gonorrhea Diagnoses by Age Group (total = 214)

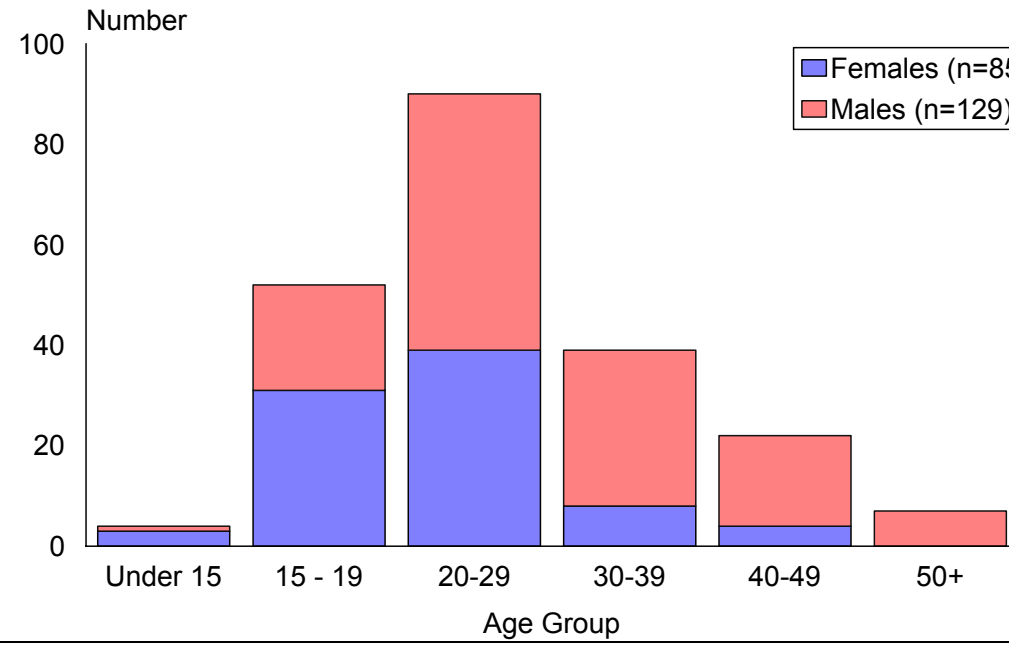


Table 2 lists the number of 2004 gonorrhea diagnoses and rate per 100,000 population by county, with counties listed in rank order by rate. The statewide rate is included in the rank order. Number of diagnoses and percent of total are also listed in the table. Four counties, Androscoggin, Cumberland and Kennebec and York, have gonorrhea rates that are higher than the statewide rate.

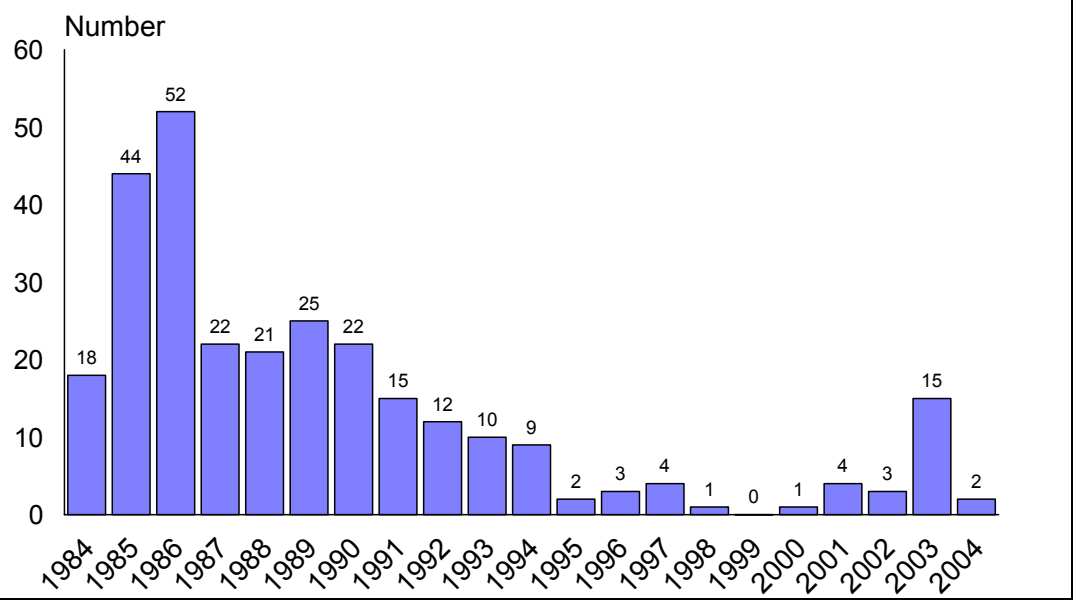
Table 3.2 County of Residence for 2004 Gonorrhea Diagnoses (Region in parentheses)

County of Residence	Rate per 100,000 population	No.	%
Androscoggin (Central)	45.3	47	22
Cumberland (Southern)	28.2	75	35
Kennebec (Central)	19.6	23	11
York (Southern)	17.1	32	15
State of Maine	16.8	214	100
Lincoln (Central)	11.9	4	2
Penobscot (Northern)	10.4	15	7
Oxford (Central)	7.3	4	2
Aroostook (Northern)	6.8	5	2
Hancock (Northern)	5.8	3	1
Sagadahoc (Central)	5.7	2	1
Knox (Central)	5.0	2	1
Washington (Northern)	2.9	1	0
Somerset (Central)	2.0	1	0
Franklin (Central)	0	0	0
Piscataquis (Northern)	0	0	0
Waldo (Central)	0	0	0

3.1.3 Syphilis

Figure 3.5 (next page) shows primary and secondary syphilis diagnoses in Maine during the past two decades, since 1984. After peaking in the mid-1980s, syphilis steadily declined until 1999, when there were no diagnoses reported in the state. During 2003, syphilis reemerged as in infectious disease of note in Maine, with 15 diagnoses reported. This total was greater than any annual total since 1991. An increased number of syphilis diagnoses was not maintained during 2004, when only two diagnoses were noted. Both diagnoses occurred among MSM. Of the 15 diagnoses reported in 2003, roughly half occurred among MSM.

Figure 3.5: Infectious Syphilis Diagnoses in Maine, 1984-2004



3.2 Key Points About STD Data

- Chlamydia is the most frequently-diagnosed STD in the state, with more than 2,100 cases reported in 2004. During 2004, chlamydia diagnoses increased by 4% over 2003.

- Young people under 24 years old are at greatest risk for chlamydia, accounting for three quarters of infections.

- In 2004, Androscoggin (Central Maine), Cumberland (Southern Maine), and Penobscot (Northern Maine) all had chlamydia rates that were greater than the statewide rate.

- There were 214 cases of gonorrhea diagnosed in Maine in 2004, a slight decrease over the 2003 total, but an increase over the seven years prior to 2003.

- MSM are disproportionately affected by gonorrhea, comprising one-third of all 2004 diagnoses.

- In 2004, Androscoggin (Central Maine), Cumberland (Southern Maine), Kennebec (Central Maine) and York (Southern Maine) all had gonorrhea rates that were greater than the statewide rate.

- Fifteen syphilis diagnoses occurred in 2003, the largest number seen in more than a decade. More than half were among MSM. There were only two syphilis diagnoses in 2004. Both were among MSM.

3.3 Maine Studies about At-Risk Populations

Four, state-wide, Maine-specific studies are summarized below that examine HIV-related risk behaviors for males who have sex with males, injection drug users, people at risk through heterosexual contact and youth.

3.3.1 2003 CPG Needs Assessment (Maine CPG, 2003)

In an attempt to describe the met and unmet HIV prevention needs in the state of Maine, the Maine HIV Prevention Community Planning Group (CPG) conducted a statewide survey of people at risk for HIV through sexual contact. Three subpopulations were included in the study: Females who have sex with males (WSM); Males who have sex with females (MSW); and Males who have sex with males (MSM).

Some key findings about sexual behavior are highlighted below:

- Risk behavior, including unprotected anal and vaginal sex, occurred in varying proportions within each population.

- In all populations, people in non-monogamous relationships had anal sex without condoms, the highest sexual risk behavior:
    - WSM -10%
    - MSW - 20%
    - MSM - 27% receptive and 34% insertive.

- For the FM and MF populations, anal and vaginal sex occurred at higher levels without condoms than with condoms. For all populations, oral sex occurred at higher proportions without condoms.

- In most cases, people not in monogamous relationships engaged in risky sex in lower proportions – and used condoms in higher proportions – than those in monogamous relationships.

- For all populations, very small proportions of respondents used condoms or barriers for oral sex.

- For all populations, significant proportions of people who engaged in anal or vaginal sex did so both with and without a condom during the past six months.

- Males who have sex with males, the population most susceptible to HIV infection, continue to engage in at-risk sexual behavior at higher rates than MSW and WSM. Many MSM respondents also indicated that they had high numbers of sexual partners during the preceding six months.

In addition to sexual behavior, survey participants were asked about HIV testing. The data indicate that large proportions (close to half of each subpopulation) were tested for HIV within the past year. However, sizable numbers of respondents have never been tested, including 17% of the MSM sample. MSM respondents who were less open about their sexual orientation were also less likely to know their HIV status.

3.3.2 HIV Prevention and Injection Drug Use in Maine: A Statewide Needs Assessment (BOH, 2003)

This needs assessment provides general information about injection drug use in Maine based on information collected during the period 1996-2001 using information from existing data sources on HIV, AIDS, hepatitis C, substance abuse treatment, hospital discharges, deaths, poison control, and arrests. Information from interviews of current and former injection drug users and service providers for this population was also used.

The key findings that emerge from this needs assessment are:

- Males account for the majority of HIV and hepatitis C infections through injection drug use.

- Stigma, fear and distrust are the biggest barriers to injection drug users accessing services; using peers, versed in the language and culture of the injection drug user community, to deliver prevention services is a way to overcome some of these barriers, according to injection drug users.

- Most injection drug users in this sample:
    - Know the basics of preventing HIV and hepatitis C, but may not practice safe behaviors when high and/or using with friends or partners,
    - Get clean needles from pharmacies, but experience discriminatory sales practices in some pharmacies,
    - Support and use needle exchange programs,
    - Had been tested for HIV, while only about half were tested for Hepatitis C,
    - Disagree on the efficacy of bleach kits to prevent disease transmission.

There are regional differences in the scope and impact of injection drug use in Maine. After population is controlled for, Cumberland County is experiencing the greatest impact of injection drug use on blood-borne disease rates and health, social, and criminal justice services. Penobscot, Washington, Knox and Androscoggin Counties are the next most impacted regions.

3.3.3 Bureau of Health Behavioral Surveillance for MSM (BOH, 2004)

In 2004, BOH engaged in MSM behavioral surveillance to help understand recent increases in HIV and STD incidence among MSM. These efforts included key informant (KI) interviews with MSM, health care providers, ASO staff and disease investigation specialists (DIS). In addition, DIS queried men testing positive for gonorrhea or HIV about their sexual behaviors, particularly in relation to their infecting sexual partner, if known. Some key findings from both methods are listed below

- MSM are hooking up through a number of venues. Internet and bars were most frequently cited by key informant (KI) interviews, bars were most frequently noted in DIS interviews.

- Sex parties (southern ME) and internet hookups appear to be important emerging venues

- Concerning the number of sex partners: KI interviews indicate that numbers have not significantly changed in the past year, although some cite an increase. DIS interviews show that numbers of partners are generally low (1-2) for unprotected anal, and somewhat higher for oral sex.

- Concerning kind of drugs used, alcohol and marijuana were cited most often in both KI and DIS interviews, followed by crystal meth and cocaine.
  - Apart from crystal meth, other club drugs do not appear to have a significant presence in ME at this time.

- Key informant interviews asked respondents what guys what think about HIV/STD prevention. Frequent responses are noted below:
  - Little or no concern. Some causes of this could be safe sex fatigue; hopelessness; emerging hedonism; a perception that these disease are treatable; an attitude that if guy looks healthy, he's uninfected.
  - Some respondents said that MSM are in fact showing concern, including negative MSM and young MSM.
- Concerning sexual behaviors with infecting partners (DIS interviews only):
  - Nine of 13 knew the partner who infected them with HIV or GC (GC=5, HIV=4)
  - Bars were most frequently-cited venue for meeting infecting partners.
  - About half the guys cited using alcohol or drugs when hooking up with infecting partner. All used alcohol. Some used other drugs too.
  - Overall, 10 of the 13 guys reported using alcohol or drugs when hooking up for sex (with infecting and non-infecting partners).

3.3.4 Youth Risk Behavior Survey (Maine Department of Education, 2003)

Data regarding sexual behavior are collected from high school and middle school students in Maine using the CDC's Youth Risk Behavior Survey (YRBS). The following selected data elements from the 2003 YRBS report are related to sexual behavior:

- Thirteen percent of middle school students and 43% of high school students surveyed have had sexual intercourse. The rate of intercourse rises from 11% in the 7th grade to 59% in the 12th grade. Although the drop is not statistically significant, it is interesting to note that the rate of sexual intercourse for 12th grade students has dropped 11 percentage points since 2001.

- Overall, the rates of sexual intercourse for middle school and high school students have declined since 1997 – from 23% in 1997 to the current figure of 13%.

- While 3% of middle school students surveyed reported having had sexual intercourse with 4 or more people, 1 in 10 high school students (11%) reported the same. Male high school students and female high school students are equally likely to report this behavior.

- Seven percent (7%) of female high school students and 4% of male high school students surveyed have had either same-sex or bi-sexual contact. The rate of same-sex only contact for high school students was 2% for both males and females.

- Seven in ten middle school students (71%) who have had sexual intercourse reported using a condom during last sexual intercourse.

Conclusion

This document was produced to serve as a planning tool to identify needs, set priorities, and project future needs for prevention and care efforts. Despite medical advances and focused HIV prevention and care programs, HIV continues to have a devastating impact on the health and well-being of Maine people. Because a significant number of new infections are occurring in Maine even as HIV-related deaths decline, HIV prevalence is slowly but steadily increasing. For this reason, continued work in prevention and care services have never been more important.

This Epi Profile will be updated on an semi-annual basis.

A companion document will be published later in 2005 that includes data from the Ryan White Title II program. These data will focus on HIV case management and medical service utilization patterns among people living with HIV.

Please address questions or suggestions to:

Mark Griswold
Maine Bureau of Health
HIV, STD and Viral Hepatitis Program
State House Station 11
286 Water Street, 9th Floor
Augusta, ME 04333
phone: (207) 933-6722
email: mark.griswold@maine.gov